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New cage welding machine for Cemcast



When a new pipe factory is planned, the cost of a cage welding machine seems negligible compared to that of a factory building, a pipe machine, mixers, etc. However, the cage welding machine plays a very important role in ensuring an efficient and competitive pipe production process.

Carl V. Carlson of Cemcast (USA) was also confronted with this challenge when he started researching the respective suppliers of cage welding machines and their machine models back in 2017.

The previous approach of rolling reinforcement mesh was discarded because of the high material and labor costs involved. To make things even more challenging, a powerful packerhead pipe machine for pipes up to mainly 48" had to

be fed, which is not feasible with only one machine for some welding machine manufacturers. A second machine, however, would imply additional space and personnel requirements in the long run, and higher investment costs right from the start.

So Mr. Carlson discussed with befriended companies from neighboring states and their experience with cage welding machines. The names apilion and ASMS came up when he outlined his high requirements for a fast cage welding machine. Subsequently, he visited quite a few customers who willingly showed him their "Zublin", as the machine type is still called by some customers today. The special feature of this machine type is that the longitudinal wires are unwound from coils and fed fully automatically into the machine, where



apilion ASMS with 24 longitudinal wires and automatic cutting device



A rotating welding head combined with another coil ensures that one cage after another can be produced continuously.

a rotating welding head combined with another coil ensures that one cage after another can be produced continuously, without reloading of the longitudinal wires - also with bell and spigot ends and with diameters from 340 to 1,920 mm (13.4 to 75.6 in).

In a conversation with apilion, the alternative of a fully automatic SMS was also discussed, in which pre-cut longitudinal wires are automatically fed in, then clamped, and subsequently rotated past a stationary welding head, which welds the circumferential / wrap wire.

However, for a customer who needs high output for small and medium size cages, the ASMS model is a much better choice as it is not only faster but also has even lower investment costs than a fully automatic SMS.

Thus, in January 2020, an ASMS with 24 longitudinal wires and automatic cutting device was ordered, which can cut the longitudinal wires in a cage-specific length as soon as the cage is welded.

The design of the coil rack is similar to that used in Europe mostly, where the coils are arranged compactly on racks and thus require little space.

The machine is complemented by a rewinding line from DTI. Soon Cemcast will expand this line with a wire drawing line to draw green wire rod in order to save material costs here as well.

In addition to selecting the right type of machine, the customer was also supported in defining the optimal location of the machine in the production hall and advised on optimized production flow.

Not only technically, but also visually, the machine has become a gem: at the express request of the customer, the machine was given a (free) special paint finish, so that today it is a real eye-catcher in the production hall.

Despite the worldwide problems within Corona, apilion employees were allowed to enter the country with special permission from the U.S. government, set up the machine and train the employees.

Here, technical support was also provided to the customer in determining the optimal reinforcement design according to ASTM C76, where further steel savings could be achieved thanks to customized reinforcement for each load class and wall thickness.



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The coils are arranged compactly on racks



The longitudinal wires are unwound from coils and fed fully automatically into the machine.

As a welcome side effect for the customer, it turned out that the ASMS model is particularly suitable for producing manhole reinforcements, as the production from coil in combination with the automatic cutting device offers maximum flexibility for a wide range of manhole lengths.

In summary, Mr Carlson notes: "Today one person can now make all of the required cages in half the time of two people using a wire roller. Labor is hard to find and automation pays big dividends allowing our labor to focus on non-repetitive work types. We now repurpose the labor formerly used to roll cages to make other items we need to produce. Our quality is even better because our cages are now produced to the nearest millimeter."

Thus, in addition to a very efficient, smooth just-in-time production of pipe reinforcements, an additional capacity for manhole reinforcements could be generated - at lower production costs. As a result, the customer is correspondingly satisfied today with his investment in this machine. ■

FURTHER INFORMATION



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apilion ASMS in video

